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USATHAMA

U.S. Army Toxic and Hazardous Materials Agency

Enhanced Preliminary Assessment Report:

Manhattan Beach Army Housing Units
Brooklyn, New York

November 1989

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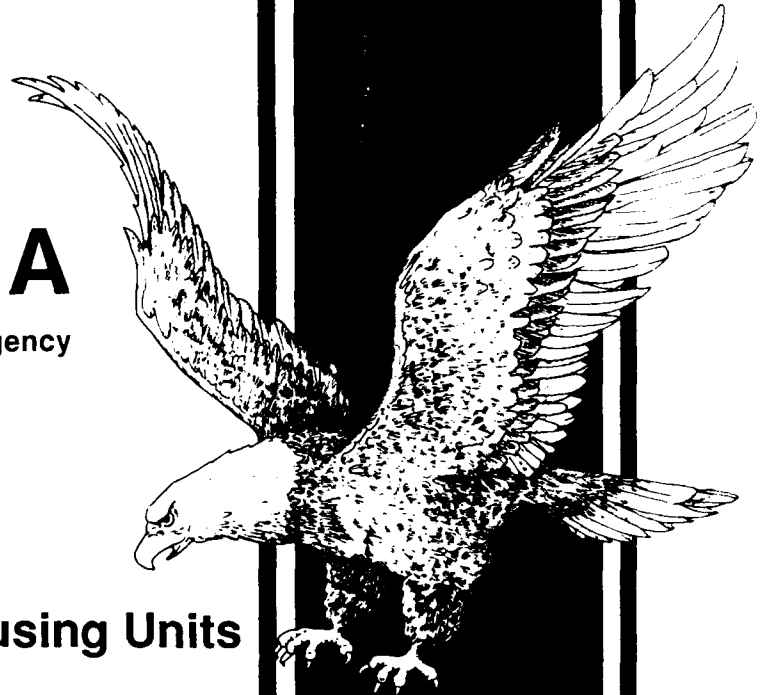
Commander
U.S. Army Toxic and Hazardous Materials Agency
Aberdeen Proving Ground, Maryland 21010-5401

prepared by

Environmental Research Division
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U.S. Department of Energy Contract W-31-109-Eng-38

REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION Unclassified		1b. RESTRICTIVE MARKINGS	
2a. SECURITY CLASSIFICATION AUTHORITY		3. DISTRIBUTION / AVAILABILITY OF REPORT Distribution Unlimited	
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE		4. PERFORMING ORGANIZATION REPORT NUMBER(S) CETHA-BC-CR-89037	
5. MONITORING ORGANIZATION REPORT NUMBER(S)		6a. NAME OF PERFORMING ORGANIZATION Environmental Research Div. Argonne National Laboratory	
6b. OFFICE SYMBOL (If applicable) ERD		7a. NAME OF MONITORING ORGANIZATION U.S. Army Toxic & Hazardous Materials Agency	
7b. ADDRESS (City, State, and ZIP Code) Building 203 9700 South Cass Avenue Argonne, IL 60439		8a. NAME OF FUNDING / SPONSORING ORGANIZATION U.S. Army Toxic & Hazardous Materials Agency	
8b. OFFICE SYMBOL (If applicable) CETHA-BC		9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER U.S. Department of Energy Contract W-31-109-ENG-38	
9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER		10. SOURCE OF FUNDING NUMBERS	
10. SOURCE OF FUNDING NUMBERS		11. TITLE (Include Security Classification) Enhanced Preliminary Assessment Report: Manhattan Beach Army Housing Units Brooklyn, NY	
12. PERSONAL AUTHOR(S)		13a. TYPE OF REPORT Final	
13b. TIME COVERED FROM TO		14. DATE OF REPORT (Year, Month, Day) November, 1989	
15. PAGE COUNT		16. SUPPLEMENTARY NOTATION	
17. COSATI CODES		18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)	
FIELD GROUP SUB-GROUP			
19. ABSTRACT (Continue on reverse if necessary and identify by block number) Argonne National Laboratory has conducted an enhanced preliminary assessment of the Army housing property located in Brooklyn, NY. The objectives of this assessment include identifying and characterizing all environmentally significant operations, identifying areas of environmental contamination that may require immediate remedial actions, identifying other actions which may be necessary to resolve all identified environmental problems, and identifying other environmental concerns that may present impediments to the expeditious sale of this property.			
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS		21. ABSTRACT SECURITY CLASSIFICATION Unclassified	
22a. NAME OF RESPONSIBLE INDIVIDUAL Joseph A. Ricci, Project Officer		22b. TELEPHONE (Include Area Code) (301)671-3461	
		22c. OFFICE SYMBOL CETHA-BC	

CONTENTS

SUMMARY	1
1 INTRODUCTION	3
1.1 Authority for the PA	3
1.2 Objectives	4
1.3 Procedures	5
2 PROPERTY CHARACTERIZATION	6
2.1 General Property Information	6
2.2 Description of Facility	6
2.3 Property History	10
2.4 Environmental Setting and Surrounding Land Use	10
2.5 Geologic and Hydrologic Settings	10
3 ENVIRONMENTALLY SIGNIFICANT OPERATIONS	13
3.1 Asbestos	13
3.2 Radon	13
3.3 Underground Storage Tanks	13
3.4 PCB Transformers	14
4 KNOWN AND SUSPECTED RELEASES	15
5 PRELIMINARY ASSESSMENT CONCLUSIONS	16
6 RECOMMENDATIONS	17
REFERENCES	18
APPENDIX: Photographs of Manhattan Beach Housing Facility and Surrounding Land	19

FIGURES

1 Location Map of Manhattan Beach Army Housing Facilities	7
2 Vicinity Map of Manhattan Beach Army Housing Units	8
3 Site Plan Map of Manhattan Beach Army Housing Units	9

TABLE

Major Hydrogeologic Units of Long Island, N.Y.	12
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SUMMARY

The Manhattan Beach housing area does not present an imminent or substantial threat to human health or the environment. There is no evidence that hazardous or toxic materials have been released from the property. Immediate remedial actions, therefore, are not warranted for the site. Although these housing units were previously used in support of a U.S. Air Force Station, it is unlikely that Air Force operational wastes were delivered to this property for management or disposal. However, potential environmental impacts have been identified at the property, and these warrant continued investigation.

Appropriate Army housing authorities have begun actions to address potential problems with respect to asbestos and radon. Those actions should continue to completion.

Once the comprehensive asbestos survey has been completed, remedial action plans to address all identified problems caused by deteriorated asbestos should be developed and implemented.

In addition, prior to the release of this property, three pole-mounted electrical transformers located on-site and owned by the Army should be sampled for the presence of polychlorinated biphenyls (PCBs); and the transformers labeled appropriately.

These recommendations assume that the property will most likely continue to be used for residential housing.



1 INTRODUCTION

In October 1988, Congress passed the Defense Authorization Amendments and Base Closure and Realignment Act, Public Law 100-526. This legislation provided the framework for making decisions about military base closures and realignments. The overall objective of the legislation is to close and realign bases so as to maximize savings without impairing the Army's overall military mission. In December 1988, the Defense Secretary's ad hoc Commission on Base Realignment and Closure issued its final report nominating candidate installations. The Commission's recommendations, subsequently approved by Congress, affect 111 Army installations, of which 81 are to be closed. Among the affected installations are 53 military housing areas, including the Manhattan Beach housing area addressed in this preliminary assessment.¹

Legislative directives require that all base closures and realignments be performed in accordance with applicable provisions of the National Environmental Policy Act (NEPA). As a result, NEPA documentation is being prepared for all properties scheduled to be closed or realigned. The newly formed Base Closure Division of the U.S. Army Toxic and Hazardous Materials Agency is responsible for supervising the preliminary assessment effort for all affected properties. These USATHAMA assessments will subsequently be incorporated into the NEPA documentation being prepared for the properties.

This document is a report of the enhanced preliminary assessment (PA) conducted by Argonne National Laboratory (ANL) at the Army stand-alone housing area near Fort Hamilton in Brooklyn, N.Y.

1.1 AUTHORITY FOR THE PA

The USATHAMA has engaged ANL to support the Base Closure Program by assessing the environmental quality of the installations proposed for closure or realignment. Preliminary assessments are being conducted under the authority of the Defense Department's Installation Restoration Program (IRP); the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Public Law 91-510, also known as Superfund; the Superfund Amendments and Reauthorization Act of 1986, Public Law 99-499; and the Defense Authorization Amendments and Base Closure and Realignment Act of 1988, Public Law 100-526.

In conducting preliminary assessments, ANL has followed the methodologies and procedures outlined in Phase I of the IRP. Consequently, this PA addresses all documented or suspected incidents of actual or potential release of hazardous or toxic constituents to the environment.

In addition, this PA is "enhanced" to cover topics not normally addressed in a Phase I preliminary assessment. Specifically, this assessment considers and evaluates the following topical areas and issues:

- Status with respect to regulatory compliance,
- Asbestos,
- Polychlorinated biphenyls (PCBs),
- Radon hazards (to be assessed and reported on independently),
- Underground storage tanks,
- Current or potential restraints on facility utilization,
- Environmental issues requiring resolution,
- Health-risk perspectives associated with residential land use, and
- Other environmental concerns that might present impediments to the expeditious "excessing," or transfer and/or release, of federally owned property.

1.2 OBJECTIVES

This enhanced PA is based on existing information from Army housing records of initial property acquisition, initial construction, and major renovations and remodeling performed by local contractors or by the Army Corps of Engineers. The PA effort does not include the generation of new data. The objectives of the PA include:

- Identifying and characterizing all environmentally significant operations (ESOs),
- Identifying property areas or ESOs that may require a site investigation,
- Identifying ESOs or areas of environmental contamination that may require immediate remedial action,
- Identifying other actions that may be necessary to address and resolve all identified environmental problems, and
- Identifying other environmental concerns that may present impediments to the expeditious transfer of this property.

1.3 PROCEDURES

The FA began with a review of Army housing records at Fort Hamilton, Brooklyn, N.Y., on August 7, 1989. A site visit was conducted at the Manhattan Beach housing area, near Fort Hamilton, on the same day, at which time additional information was obtained through personal observations of ANL investigators.² Photographs were taken of the housing units and surrounding properties as a means of documenting the condition of the housing units and immediate land uses. Site photographs are appended.

All available information was evaluated with respect to actual or potential releases to air, soil, and surface and ground waters.

Access to individual housing units was obtained through the military housing inspector stationed at Fort Hamilton in Brooklyn, N.Y. ANL investigators revisited the site on September 6, 1989, at which time the interiors of the housing units were inspected.

2 PROPERTY CHARACTERIZATION

2.1 GENERAL PROPERTY INFORMATION

The Manhattan Beach housing area is located near Fort Hamilton, in Kings County on Long Island, N.Y. The area occupies 4.74 acres and has 72 residential units in nine buildings. Adjacent to the housing area, to the east, is Kingsborough College. The housing property and surrounding area total 70.27 acres, and at one time this combined land parcel was part of the Manhattan Beach Air Force Station, New York. The area surrounding the Manhattan Beach housing facility is predominantly residential. The property extends to Sheepshead Bay. Across the bay are many shops and businesses.

Figures 1 and 2 show the general location of the facility.

The housing units, now administered through Fort Hamilton, were constructed by a private corporation in 1939 as part of a larger development extending west.³ No additional major construction has taken place on the property since that time. The buildings are occupied at full capacity by active-duty military personnel assigned to military bases in the area.²

2.2 DESCRIPTION OF FACILITY

Figure 3 presents the site plan of the housing property.

Housing Units

The Manhattan Beach housing area consists of nine 3-story buildings with a total of 72 residential units. Two buildings are "attached row-type" design, housing eight families each. Seven buildings are "duplex" design and also house eight families each.⁴

Renovations to the homes within the last five years include new roofs, rear steps (steel), kitchens, bathrooms, windows, storm doors, and garage doors; exterior painting; and tuckpointing, as required.^{4,5}

Utilities

Since development of the property, all utility services have been provided by local utility companies. There are no drinking water wells on the property. Solid waste (garbage) is removed by the local disposal service.²

Sewage

The housing complex is linked to the local sewage processing district. No on-site sewage treatment has ever been performed.²

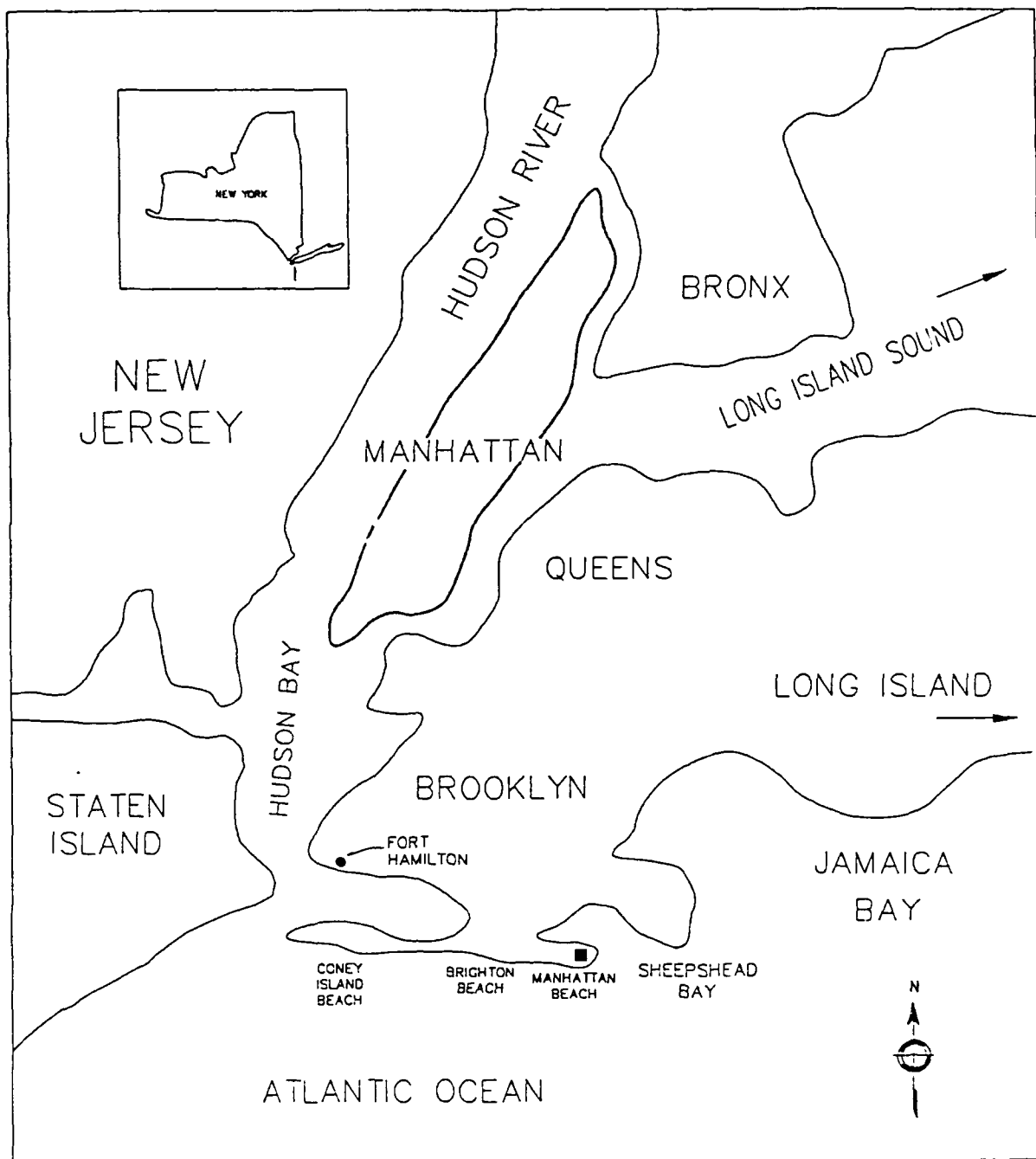


FIGURE 1 Location Map of Manhattan Beach Army Housing Facilities



FIGURE 2 Vicinity Map of Manhattan Beach Army Housing Units

Fuel Storage

Heating is provided by oil-fired furnaces. Oil is stored in 275-gallon above-ground tanks in the basements of each building. The two "row-type" buildings, with eight large housing units each, have eight fuel-storage tanks. The seven smaller "duplex" design buildings have four fuel-storage tanks each.

Storm Drainage System

There is no record of storm drainage problems at the facility. The property is not within a designated floodplain.³ Storm drains positioned along Quentin Street collect rainfall and direct it to the local storm drainage system, which empties to Sheepshead Bay.^{2,6}

Other Permanent Structures or Property Improvements

There are no additional structures on site. A playground area with swings and other playground equipment is provided.²

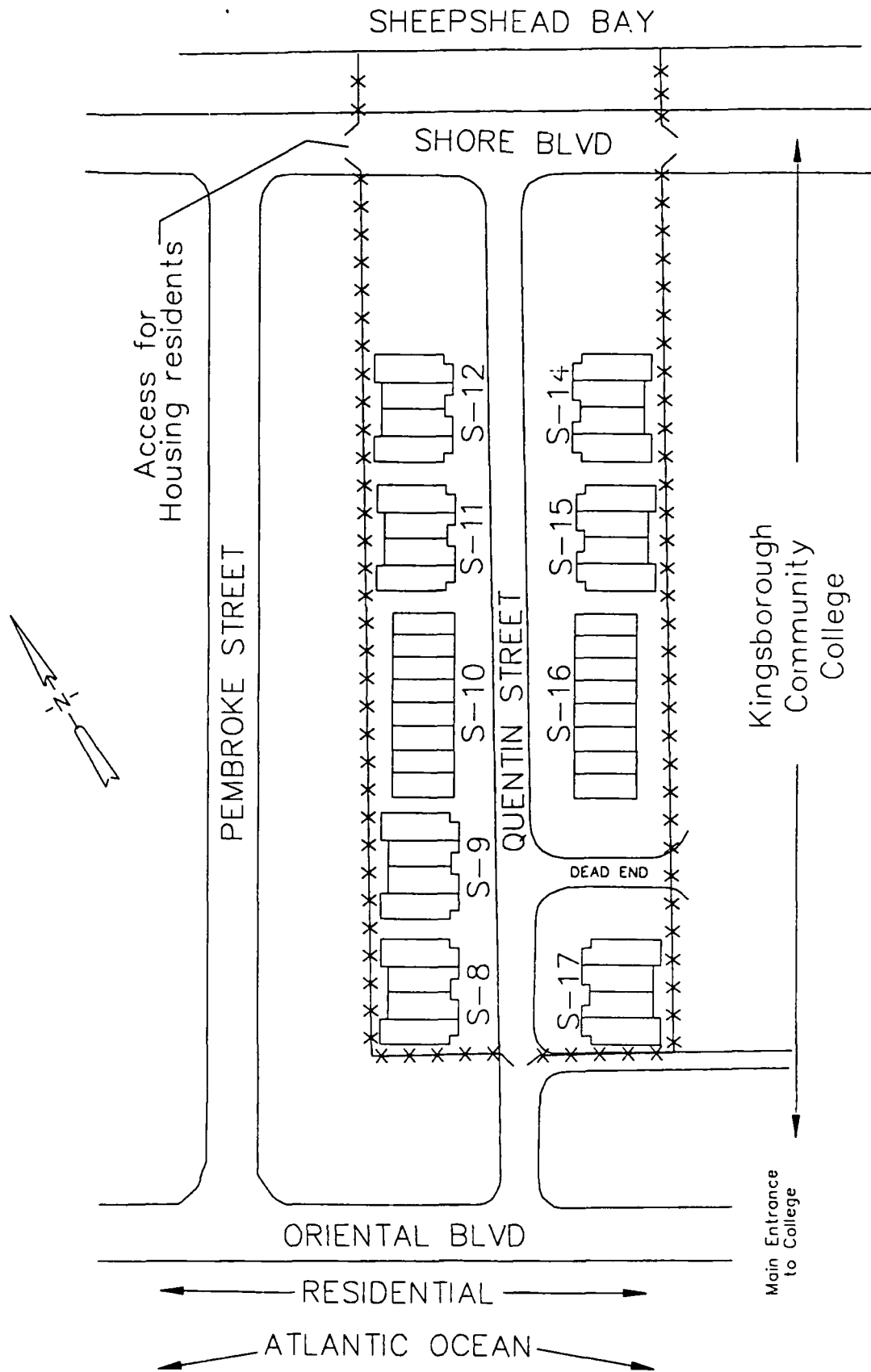


FIGURE 3 Site Plan Map of Manhattan Beach Army Housing Units

2.3 PROPERTY HISTORY

The 72 units of family housing were constructed by a private developer in 1939 as part of a larger development, which included Oxford and Pembroke Streets to the west. This building construction at the Manhattan Beach housing area is therefore similar to that of neighboring residences.³

The U.S. Maritime Commission acquired the housing property in 1942 along with additional land to the east and south for a total of 68.20 acres. Declared excess to the Department of Commerce in 1954, the property was transferred to the Department of the Air Force. The Air Force established the Manhattan Beach Air Force Station, N.Y. Eventually, the Air Force Station comprised 70.27 acres and occupied much of the eastern peninsula of Coney Island, extending from Sheepshead Bay, north of the housing property, east and south to the Atlantic Ocean.³ No additional information was available from Fort Hamilton personnel regarding operations at the Air Force Station, which is no longer operational. There is no evidence of releases from the Air Force facility.²

On September 4, 1959, the 72 housing units together with 4.74 acres extending to Sheepshead Bay were transferred to the Department of the Army. The housing has since been occupied by military personnel. Following development of Kingsborough College east and southeast of the housing property, a roadway easement was provided along Shore Boulevard, adjacent to Sheepshead Bay, for an entrance to that facility.³

2.4 ENVIRONMENTAL SETTING AND SURROUND LAND USE

The area surrounding Manhattan Beach housing is primarily residential. Kingsborough College is situated to the east and southeast, adjacent to the housing property. To the west and southwest are high-value homes, including several buildings constructed at the same time as the housing complex and of similar design. Sheepshead Bay is to the north. Along the bay is a boardwalk with shops, restaurants, and small businesses. Boating and fishing in the summer give the area a resort atmosphere. The Manhattan Beach housing property extends to the waterfront across Shore Boulevard.

There are no known endangered or threatened animal or plant species in the area affected by the proposed closure action. No structures on-site are considered to be of historical significance. No cemetery (private or military) is situated on the housing property.^{2,3}

2.5 GEOLOGIC AND HYDROLOGIC SETTINGS

Long Island, N.Y., is situated in the Coastal Plain Province of the mid-Atlantic area. It is underlain by a wedge-shaped mass of sediments, consisting of clay, sand, and gravel, which dips and thickens toward the southeast. These sediments are underlain by igneous and metamorphic rock, which comprise the basement rock complex. The top of the bedrock is at or near land surface in the northwest part of the island, dropping to about 610 meters below sea level toward the southeast in south-central Suffolk County.⁴

Generally, the surface soils on Long Island consist of layers of permeable sediments (sand and gravel) which are separated by layers of poorly permeable sediments (silts and clays). However, extensive reworking of surface areas in western Long Island for the past 150 years has left a mixture of surface soils. In the region near the Manhattan Beach housing area, approximately 60 to 80 meters of unconsolidated sediments overlie the bedrock.⁴ This unconsolidated section consists of three main units:

1. A lower silty clay;
2. A section of sand and gravel; and
3. An upper section of poorly sorted sediments including clay, silt, sand, and gravel.

The sands and gravels, which are of glacial origin, are fairly permeable and act as aquifers. The less permeable deposits act as confining layers. Descriptions of the various units and their water-bearing properties are included in the following table. The level of groundwater ranges from several meters below land surface in the higher areas of Long Island to the surface or near surface in regions such as the Manhattan Beach housing area, near the coast. Groundwater flow is generally to the southwest.⁴

The climate on Long Island is affected by the surrounding water, which moderates the temperature and enhances wind circulation. A warm, humid summer and cold, snowy winter are typically separated by a mild spring and fall. The average annual temperature is 12.4°C, ranging from 0.1°C in January to 24.8°C in July, on average. Rainfall in the region averages about 106 centimeters (cm) annually; monthly averages vary from a low of 4.0 cm in March to a high of 11.4 cm in August. Average annual snowfall is 73 cm.

Major Hydrogeologic Units of Long Island, N.Y.

Hydro- geologic Unit	Geologic Name	Approximate Maximum Thickness (ft)	Water-Bearing Character
Upper glacial aquifer	Upper Pleistocene deposits	400	Mainly sand and gravel of moderate to high permeability; also includes clayey deposits of glacial till of low permeability
Gardiners clay	Gardiners clay	150	Clay, silty clay, and a little fine sand of low to very low permeability
Jameco aquifer	Jameco gravel	200	Mainly medium to coarse sand of moderate to high permeability
Magothy aquifer	Magothy Formation	1,000	Coarse to fine sand of moderate permeability; locally contains gravel of high permeability, and abundant silt and clay of low to very low permeability
Raritan clay	Clay member of the Raritan Formation	300	Clay of very low permeability; some silt and fine sand of low permeability
Lloyd aquifer	Lloyd Sand member of the Raritan Formation	300	Sand and gravel of moderate permeability; some clayey material of low permeability

Source: Cohen, P., O.L. Franke, and B.L. Foxworthy, *An Atlas of Long Island's Water Resources*, New York State Water Resources Commission Bulletin 62 (1968).

3 ENVIRONMENTALLY SIGNIFICANT OPERATIONS

3.1 ASBESTOS

In July 1989, Fort Hamilton issued a request for proposals to do a comprehensive survey of all military housing under its administration, including those units at the Manhattan Beach housing area.⁷ The materials to be sampled include suspended ceiling tile, floor tile, asbestos siding, plaster-gypsum wallboard, and dust accumulated inside ductwork. The proposal also requires that the recipient contractor/laboratory doing the asbestos analysis participate in the Environmental Protection Agency Bulk Sample Quality Assurance Program at Research Triangle Park, N.C., and in the National Institute of Occupational Safety and Health Proficiency Analytical Testing Program. At the time of the site visit, however, no contract had been awarded to do the asbestos sampling and testing at the Manhattan Beach housing area. Furthermore, no remedial action plans to address deteriorated asbestos have been developed.

Housing unit #181, inspected during the initial site visit, has insulation on the heating pipes leading from the furnace room into all of the other downstairs rooms. In some places the insulation material, which may contain asbestos, is cracked open and flaking off. The condition of the insulation on the heating pipes of other units was comparable to that in this unit.²

3.2 RADON

The New York Area Command (NYAC) instituted a radon surveillance program in February 1989.⁸ The radon monitoring program is to consist of two parts: (1) radon measurement, and (2) radon mitigation, if necessary.

Monitoring was to have begun in March and last for one year. Although radon detectors were distributed in March/April 1989 to downstairs residents at the Manhattan Beach housing area, some occupants stated that they did not receive a detector kit. One resident stated that she had received the kit but had failed, as of the ANL site visit, to install it.²

In September 1989, ANL investigators installed radon monitors in the housing units in a separate monitoring effort under the Base Closure Program. Monitoring will last for a period of 90 days.

3.3 FUEL STORAGE TANKS

A 275-gallon storage tank for heating fuel is located in the building basements.² Although minor, inadvertent spills have occurred during tank refilling, leaks from these above-ground tanks were not observed.

All the original fuel storage tanks were replaced in the 1960s. Since then, a few have again been replaced on an as-needed basis. However, there is no record of significant releases from any of the former or current tanks.⁶

3.4 PCB TRANSFORMERS

Three Army-owned electrical transformers on one pole are located near the middle of the block serving the housing units. There was no evidence of oil spillage on the ground underneath the transformers. Personnel at Fort Hamilton had no record of whether the transformers had been tested for the presence of PCBs. A PCB warning label was not displayed.^{2,6}

4 KNOWN AND SUSPECTED RELEASES

No major releases or impacts to the environment are known to have occurred at the Manhattan Beach housing area. Minor fuel oil stains, probably the result of inadvertent spills during tank refilling, were evident on the floor beneath the fuel tank in the basements of the residences. However, no leaks from the tanks were observed. No other hazardous materials or hazardous wastes are stored on site.

5 PRELIMINARY ASSESSMENT CONCLUSIONS

Although this property was originally constructed as part of a larger residential development by a private firm, it was soon acquired, along with additional land totaling approximately 70 acres, by the U.S. Maritime Commission. The Coast Guard facility was later developed by the U.S. Air Force into the Manhattan Beach Air Force Station. No records or additional information was available on the operations performed at the former Air Force Station. There is no record that any wastes associated with those operations were ever delivered to or managed at the housing property.

Insulation surrounding the heating pipes extending from housing unit furnaces may be made of material containing asbestos. The insulation is deteriorating and flaking off. The comprehensive asbestos survey planned by Fort Hamilton officials has not yet been implemented, however.

The three Army-owned transformers on-site, which show no signs of leakage, may contain PCBs. No confirmatory sampling of these transformers has been performed.

6 RECOMMENDATIONS

The Manhattan Beach housing area does not present an imminent or substantial threat to human health or the environment. There is no evidence to suggest that hazardous or toxic materials have ever been released from the property. No immediate remedial actions, therefore, are warranted for the site.

Fort Hamilton housing officials have already begun appropriate actions to address potential problems with asbestos and radon. A comprehensive asbestos survey is planned for the housing units and radon monitoring is on-going. These actions should continue to completion. However, this survey will not extend to asbestos remediation, should that be necessary. Should the asbestos survey identify actual problems caused by deteriorating asbestos, therefore, it is recommended that remedial action plans to address these problems be developed and implemented.

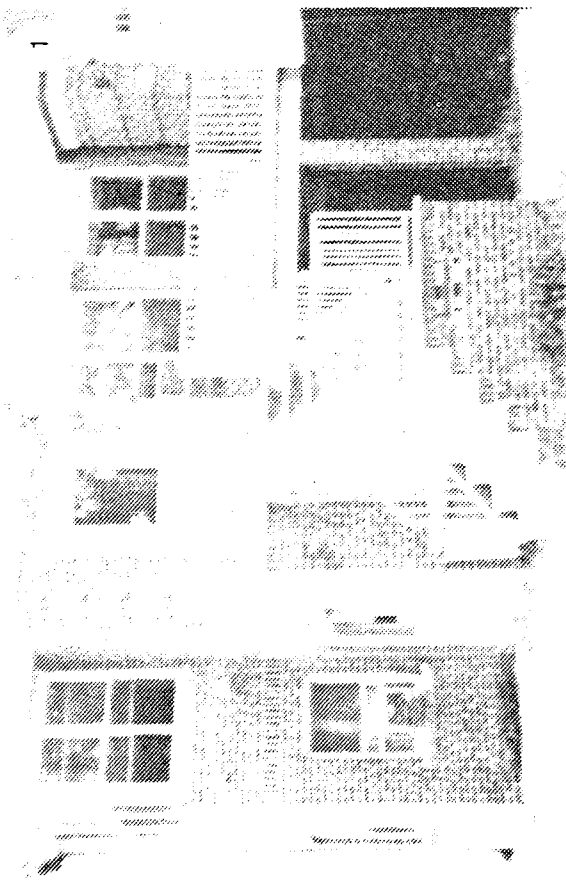
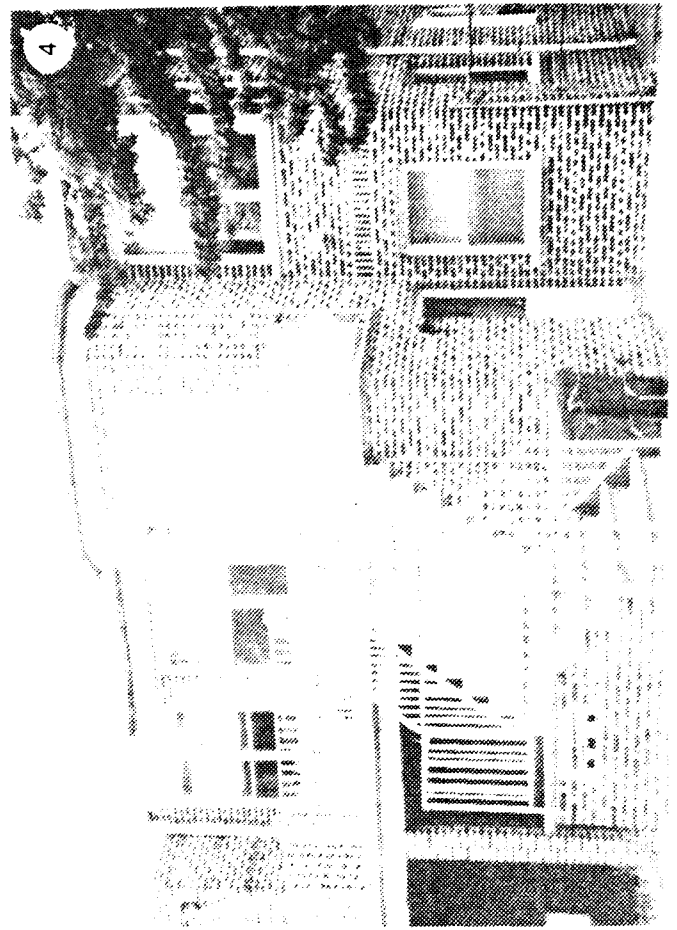
One further action is recommended prior to release of this property: the three Army-owned electrical transformers on the property should be sampled for the presence of PCBs and the transformers labeled appropriately.

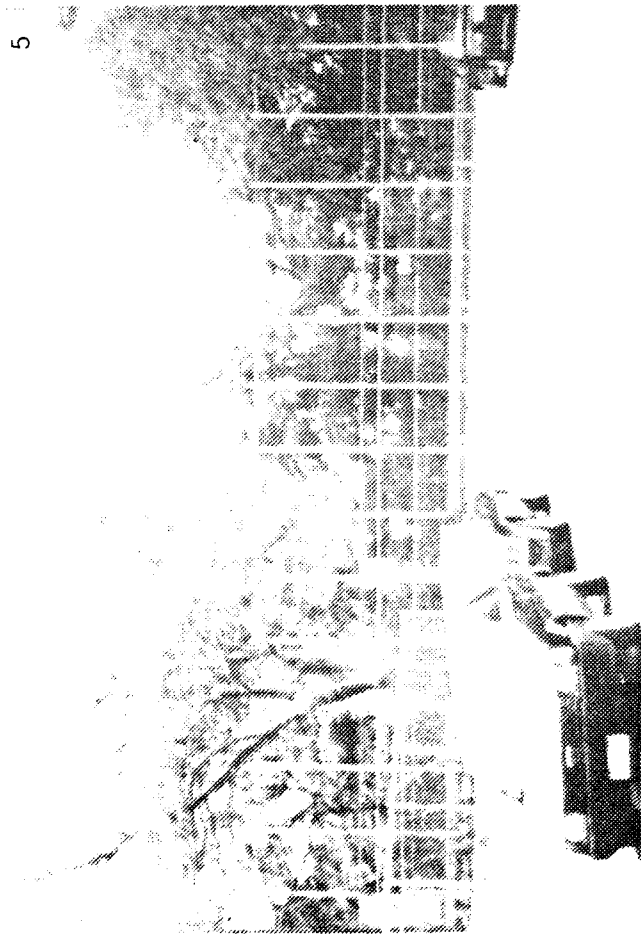
These recommendations assume that this property will most likely continue to be used for residential housing.

REFERENCES

1. *Base Realignments and Closures*, Report of the Secretary's Commission (Dec. 1988).
2. New York Military Housing Site Visit, notes by ANL investigators (Aug. 7-11, 1989).
3. Statement by Fort Hamilton, Report of Excess, Manhattan Beach Family Housing.
4. Statement by Fort Hamilton regarding status of Manhattan Beach Housing.
5. Fort Totten, N.Y., Office of Post Engineer, Repairs to Military Family Quarters, Manhattan Beach, N.Y. (March 12, 1965).
6. Letter from Anthony Pierro, Department of the Army, Office of the Director of Engineering and Housing (NYAC), Fort Hamilton (Oct. 1989).
7. Work order for a comprehensive survey of asbestos at Fort Hamilton, N.Y., and housing units under its administration (July 1989).
8. Radon Surveillance Program order from the Department of Engineering and Housing, New York Area Command (Feb. 1989).

APPENDIX:
PHOTOGRAPHS OF MANHATTAN BEACH HOUSING FACILITY
AND SURROUNDING LAND

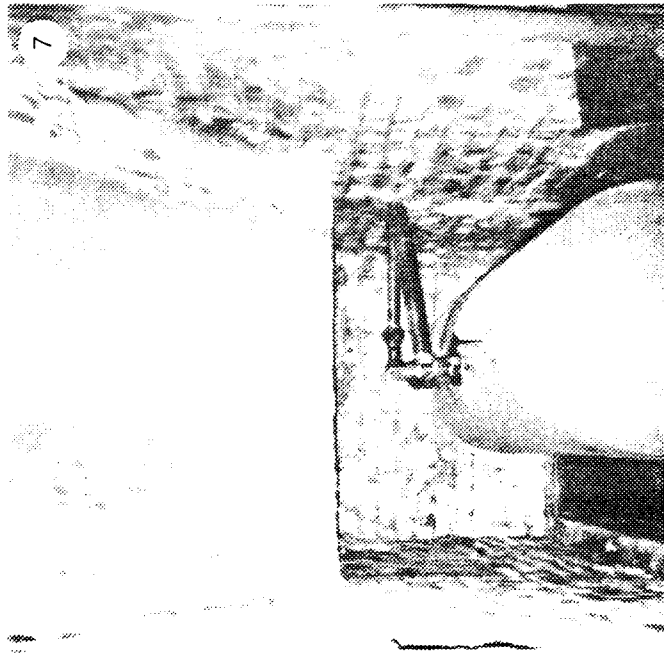




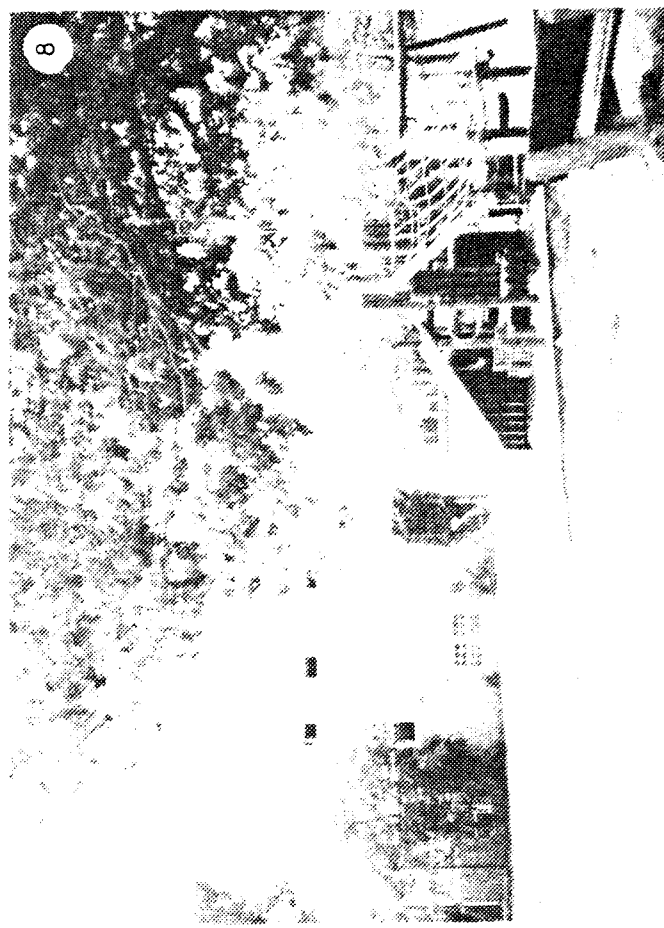
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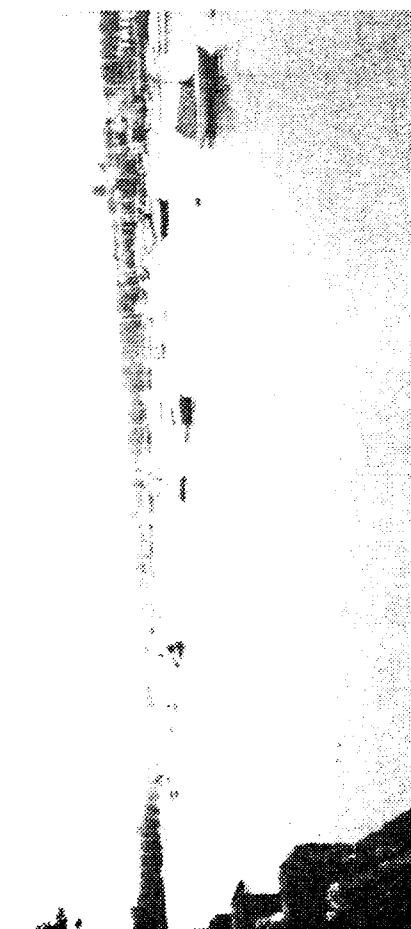
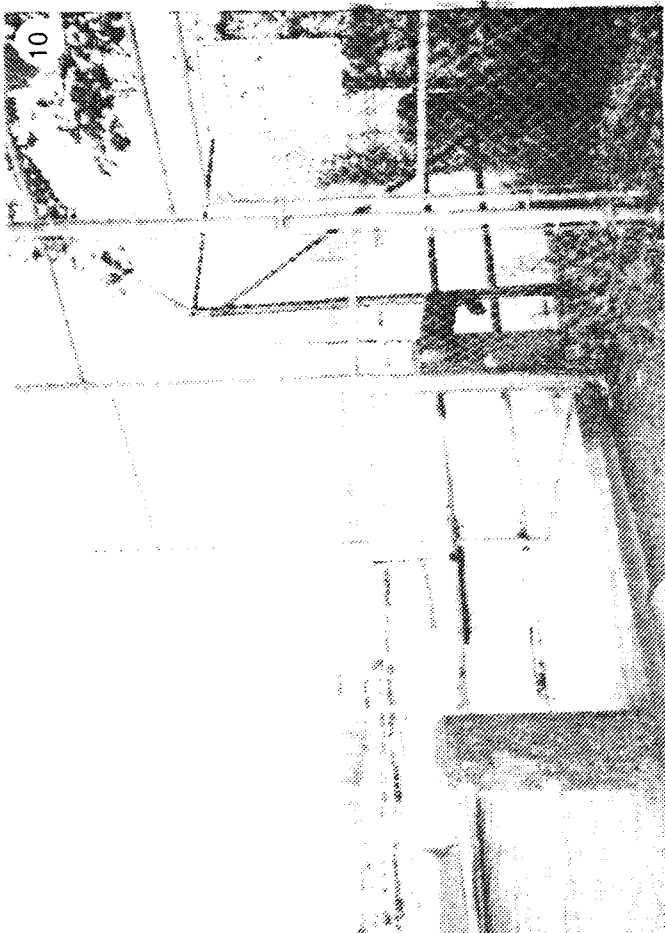
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IDENTIFICATIONS OF PHOTOGRAPHS

1. Near intersection of Shore Blvd. and Quentin Street, looking east toward Building S-14.
2. Along Quentin Street, looking east.
3. Quentin Street, looking south through housing complex.
4. Along Quentin Street looking west.
5. Near intersection of Shore Blvd. and Quentin Street, looking north; Sheepshead Bay is beyond trees and brush.
6. Transformers on pole within housing property.
7. A 275-gallon tank for furnace fuel oil located in all units with basement.
8. Playground located at intersection of Shore Bldg. and Quentin Street, to the west; private residential property in background.
9. Narrow wooded area separates housing units from Sheepshead Bay water front.
10. Manhattan Beach housing property extends to Sheepshead Bay water front.
11. At the entrance to housing property, looking north across Sheepshead Bay toward Brooklyn, N.Y.